

TAIL PIPE FOR MUFFLER

2 BACKGROUND OF THE INVENTION

3 1. Field of the Invention

4 The present invention relates to a tail pipe for a muffler, and more
5 particularly to a tail pipe having external fittings that make the tail pipe to look
6 more attractive and perform warning signals.

7 2. Description of Related Art

8 Tail pipes in accordance with the prior art do not have any feature for
9 visible warning or decoration so that the tail pipe is potentially hazardous and is
10 not attractive. Because special accessories for a vehicle are also required for
11 some drivers who enjoy customizing their vehicles so as to distinguish them
12 from others. Especially, when a vehicle using a luminous tail pipe is in dark place,
13 the vehicle will attract the attention of surrounding people. Such aforesaid
14 features to a tail pipe have not been seen yet in the market.

15 Besides, combusted gas in an engine of a vehicle will be exhausted
16 through the mufflers and the exhaust pipes of the mufflers, the temperature of the
17 exhaust pipes will be so high that somebody who inadvertently touches the
18 exhaust pipe will be burned. The tail pipes are attached to the exhaust pipes of
19 the mufflers to prevent the hot exhaust pipes burning somebody. However, the
20 temperature of the tail pipes will simultaneously rise due to heat radiated from
21 the exhaust pipe. Thus, visible warning signs for the tail pipes are required to
22 alert passers-by to the potential danger.

To overcome the shortcomings, the present invention provides an improved tail pipe having external fittings to mitigate or obviate the

1 aforementioned problems.

2 SUMMARY OF THE INVENTION

3 The main objective of the invention is to provide an improved tail pipe
4 for a muffler and the tail pipe has external fittings that provide decorations for
5 the tail pipe.

6 Another objective of the invention is to provide an improved tail pipe
7 that is luminous to provide visible warnings of high temperature of the tail pipe
8 and further provide.

9 To achieve the aforementioned objective, a tail pipe in accordance with
10 the present invention comprises a hollow body, two external fittings and an
11 optional illuminating assembly. The hollow body has an outer periphery and an
12 inner passage that has a front opening and a rear opening. Each external fitting is
13 mounted on the outer periphery of the body by means of fasteners. The external
14 fitting has a side face and a protrusion formed from the side face. The protrusion
15 has a shape, such as a pattern, symbol or company logo and is light reflectable or
16 light transmittable.

17 The illuminating assembly is mounted in the inner passage of the body
18 and extends partially out of the body to brighten the external fittings to be visible
19 in a dark environment and the external fittings are made of transparent or
20 translucent materials. Therefore, the external fittings will provide a visible signal
21 to show a position of the tail pipe and thus function as a warning signal to alert
22 someone near the tail pipe to keep a distance from the tail pipe, and also provide
23 a decoration for the tail pipe.

24 Other objectives, advantages and novel features of the invention will

1 become more apparent from the following detailed description when taken in
2 conjunction with the accompanying drawings.

3 **BRIEF DESCRIPTION OF THE DRAWINGS**

4 Fig. 1 is a perspective view of a tail pipe for a muffler in accordance with
5 the present invention;

6 Fig. 2 is an exploded perspective view of the tail pipe in Fig. 1 that
7 further has an illuminating assembly;

8 Fig. 3 is a perspective view of the tail pipe in Fig. 2;

9 Fig. 4 is an operational perspective view of the tail pipe in Fig. 2 that is
10 mounted on an exhaust pipe connected to the muffler; and

11 Fig. 5 is an operational perspective view of an alternative embodiment of
12 the tail pipe in Fig. 2.

13 **DETAILED DESCRIPTION OF PREFERRED EMBODIMENT**

14 With reference to Figs. 1 and 4, a tail pipe in accordance with the present
15 invention comprises a hollow body (10) and two external fittings (20). The
16 hollow body (10) has a front (not numbered), a rear (not numbered), an outer
17 periphery (not numbered) and an inner passage (101). The inner passage (101)
18 has a front opening (not numbered) and a rear opening (not numbered) that are
19 defined respectively in the front and the rear of the body (10) to receive an
20 exhaust pipe (31) of a muffler (not shown) through the rear opening. The body
21 (10) further has two mounting holes (102) respectively defined through the outer
22 periphery for the tail pipe to fix on the exhaust pipe (31) of the muffler by means
23 of fasteners, such as screws (30).

24 Each external fitting (20) can be made with a capability of reflecting

1 light and is mounted on the outer periphery of the body by means of fasteners,
2 such as screws (30). The external fitting (20) has a side face (not numbered) that
3 faces outward from the body (10) and a protrusion (201) formed from the side
4 face. The protrusion (201) has a given shape, such as a significant pattern,
5 company logo or symbol.

6 With reference to Figs. 2 and 3, the tail pipe further comprises a
7 illuminating assembly (40) to brighten the external fittings (20) while the
8 external fittings (20) are made of transparent or translucent materials to be
9 light-transmittable. The illuminating assembly (40) comprises a circuit board
10 (41), two mounting brackets (42) and multiple illuminating members (43), such
11 as light emitting diodes (LEDs). The mounting brackets (42) are respectively
12 attached to the inner periphery of the body (10) and are L-shaped. The circuit
13 board (41) connects electrically to the electricity supply of a vehicle, and is
14 mounted on the mounting brackets (42). The circuit board (41) further has two
15 extended arms (411) and is ring-shaped with a central through hole (412) that
16 allows the exhaust pipe (31) shown in Fig. 4 to extend through the circuit board
17 (41). The extended arms (411) are respectively extended out of the body (10) and
18 correspond to the external fittings (20).

19 The illuminating members (43) are respectively mounted on the
20 extended arms (411) outside the body (10) and connect electrically to the circuit
21 board (41). Thus, the illuminating members (43) can be illuminated for
22 performing warning signs after the vehicle becomes recently stationary to
23 prevent people walking around the parked vehicle form getting burned. Also, the
24 illuminating members (43) can be lit for decoration of the vehicle while the

1 vehicle is moving in a dark environment. The illuminating members (43) face
2 respectively the external fittings (20) and produce light that is transmitted into
3 the external fittings (20) to make the external fittings (20) visible in the dark
4 environment.

5 With reference to Fig. 5, the aforesaid tail pipe further has an inner pipe
6 (11) mounted in the inner passage (101) of the body (10). The inner pipe (11) has
7 a front opening (not numbered) and a rear opening (not numbered) that extend
8 respectively toward the front and the rear openings of the inner passage (101).
9 The inner pipe (11) extends through and is held in the central through hole (412)
10 of the circuit board (40) and is suspended by fasteners, such as bolts (32) or
11 rivets (not shown). The rear opening of the inner pipe (11) connects to the
12 exhaust pipe (31) to guide the combusted gas being directly exhausted through
13 the front opening of the inner pipe (11) to prevent the illuminated assembly (40)
14 from being contaminated by the combusted gas.

15 Therefore, the protrusions (201) of the external fittings (20) can be
16 formed as a decorative pattern to make the tail pipe to look more attractive.
17 Especially in a dark place, the luminous external fittings (20) will provide an
18 attractive decoration effect for the tail pipe to attract the attention of surrounding
19 people.

20 Besides, the external fittings (20) will provide a visible signal by
21 reflecting light or transmitting light themselves and function as a warning signal
22 to show an exact position of the tail pipe. The external fittings (20) will alert
23 someone who is near the hot tail pipe to keep a distance away from the tail pipe
24 to avoid being burned.

1 Even though numerous characteristics and advantages of the present
2 invention have been set forth in the foregoing description, together with details
3 of the structure and function of the invention, the disclosure is illustrative only,
4 and changes may be made in detail, especially in matters of shape, size, and
5 arrangement of parts within the scope of the appended claims.